

Remarks

Both Kaminsky et al. '905 and Kaminsky et al. '517 contain the following identical disclosures:

While this invention is susceptible of embodiment in many different forms, this specification and accompanying drawing disclose only some specific forms as an example of the use of the invention. In particular, preferred embodiments of the invention for purification of a gaseous mixture comprising olefin preferably an olefin of from two to about eight carbon atoms having a single double bond, acetylenic impurities having the same or similar carbon content and optionally alkane (paraffin hydrocarbons) and/or alkenes having more than one double bond (di or tri-olefin hydrocarbons) produced by thermal cracking of hydrocarbons are illustrated and described. The invention is not intended to be limited to the embodiments so described, and the scope of the invention will be pointed out in the appended claims. (patent '905 at column 10, lines 13-27 and patent '517 at column 10, line 57 to column 11, line 4 – Emphasis added)

Thus, according to the cited references both the '905 and '517 patents disclose that the processes disclosed therein can be practiced in many different applications, and that purification of olefins produced by thermal cracking is merely one of such many applications.

Furthermore, di- and tri-olefins, such as propadiene, are disclosed in both the '905 and '517 patents as being impurities in olefins that are produced by thermal cracking. It is important to note that such di- and tri-olefins are not disclosed or even suggested in either the '905 or the '517 patent as being impurities in olefins that are produced in any other applications than by thermal cracking. Moreover, none of the illustrative Examples 1-7 in the '905 patent or of illustrative Examples 1-10 in the '517 patent disclose feedstocks that contain any di- or tri-olefin. Each such example -- (including Example 7 in the '905 patent and Example 10 in the '517, both of which are

performed using olefin feedstocks that are produced in a commercial large scale olefin stream cracking plant) discloses mixtures of ethylene and only acetylene as the impurities. Consequently, there is no mention or even suggestion in either the '905 patent or the '517 patent that a di- or tri-olefin is separated from any olefin mixture disclosed therein. Therefore, it is not inherent from the disclosures of either the '905 patent or the '517 patent that a di- or tri-olefin is necessarily an impurity in the olefin being purified, or, if a di-olefin or tri-olefin is present in such olefin, that the di-olefin or tri-olefin is in fact separated from the olefin being purified.

Contrary to the Examiner's contention, the discussion in the '517 patent in column 2, line 62 to column 3, line 5 of the disclosure of Kokai JP Number 50929-1968 contains the following statement in column 3, line 1-5:

"Separations described included 1000 ppm ethyl acetylene and 1000 ppm vinyl acetylene from liquid 1,3-butadiene, 100 ppm acetylene from ethylene gas, 100 ppm methyl acetylene from propylene gas, and 50 ppm phenyl acetylene from liquid styrene (vinyl benzene)." (emphasis added)

Thus, this statement in the '517 patent clearly indicates that acetylenic compounds are separated from di-olefinic compounds; but there is no indication that di-olefinic compounds are separated from ethylene.


Thus, there is no indication in either the '905 patent or the '517 patent either (1) that a di- or tri-olefin is necessarily or inherently present with acetylene as an impurity in an olefin mixture to be purified, or (2) that, even if a di- or tri-olefin were present, the di- or tri-olefin is also be separated with an acetylenic impurity if an acetylenic impurity were removed from an olefin mixture to be purified.

In addition, as stated in Applicants' specification on page 5, lines 20-23 and page 10, lines 5-9 and as recited in Applicants' Claim 1, Applicants' claimed process permits the separation of di-olefins that are present at an initial concentration of up to 1 percent -- that is, 10,000 parts per million -- by volume in an olefin mixture. By contrast, both the '905 and '517 patents disclose the separation of acetylene that is present at an initial concentration less than about 5000 parts per million by weight in the mixture. Thus, Applicants' claimed method has a much greater capacity for separation of di-olefins than the '905 and '517 patents disclose for the separation of acetylene.

In view of the above amendments and remarks, Applicants respectfully request reconsideration and allowance of Claims 1, 2, 4-10, 21 and 22.

Respectfully submitted,

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